BISS Biodiversity Information Science and Standards

Biodiversity Information Science and Standards 8: e138462
doi: 10.3897/biss.8.138462

OPEN ACCESS

Conference Abstract

Recurating Herbarium Collections Post-Digitisation: Cyperaceae as a Case Study

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Received: 03 Oct 2024 | Published: 04 Oct 2024

Citation: Davies NMJ, Cranham L (2024) Recurating Herbarium Collections Post-Digitisation: Cyperaceae as a Case Study. Biodiversity Information Science and Standards 8: e138462. https://doi.org/10.3897/biss.8.138462

Abstract

In 2022, the Royal Botanic Gardens, Kew began the mass digitisation of 8.25 million herbarium and fungarium specimens and, at the same time, introduced a new integrated collections management system designed to manage specimen data from all the collections at Kew. For the herbarium curation team, this posed a challenge to adapt and update procedures.

The herbarium curation team is responsible for the management and care of the herbarium collections, which includes recurating specimens according to new publications. Prior to mass digitisation, this would involve the physical rearrangement of collections and updates of the few specimens that had been digitised already, such as type specimens.

Recurating specimens according to new publications is a complicated curation task. Pre-digitisation, curators would use publications to guide the curation task, looking for the name changes and specimens that are cited as being at Kew. Specimens would be pulled from the collections, new determinations would be added to cited specimens, species and genus covers would be updated with the name changes and specimens would be rearranged. Any specimens already barcoded from previous digitisation projects would be updated in the Kew Herbarium Catalogue, but only around 13% of the collection was digitised prior to this mass digitisation effort.

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The new Integrated Collections Management System (ICMS) database is bringing all of Kew's collections data together into one place, linking related specimens in other collections at Kew. For example, a related herbarium specimen, spirit collection and seed collection can be linked together. It has been a steep learning curve for the curation team, learning how to update specimen data in this new database.

The mass digitisation project has created a large digital herbarium collection for curators to manage. They must ensure that the physical and digital specimen data remain linked together, by avoiding specimen updates being made to one and not the other. As the herbarium is digitised, the data are added to ICMS. The curators need to reduce the risk that the physical and digital collections will diverge if not updated in parallel, and one of these collections would be missing data essential for keeping the specimens up to date to facilitate easy access both in person and online. An extra complication is that updates to the data impact linked specimens in other collections. Additionally, digitised specimen data are available via Global Biodiversity Information Facility and the Global Plants database, and will soon be available online via the new data portal that Kew is developing. Therefore, it is essential to ensure that these data aggregators hold the correct information linking to the physical collections at Kew.

When considering a recuration, it is important to complete the task fully to ensure that specimens are not misplaced, which causes confusion and wastes time for future users. Last year, curators needed to manage a large physical recuration of a plant family, whilst also updating these collections in the new database.

A 12-month curation intern was recruited to dedicate time and focus on a recuration project post-digitisation. The case study aim was to work out the considerations and a procedure for any such large recuration post-digitisation. The Cyperaceae plant family was chosen, as this collection had been digitised. With the data available on ICMS and with an expert at Kew to help navigate the publications to determine the latest taxonomy, this ensured that there was someone to ask about any taxonomic issues that might arise.

As the project progressed, many queries arose that involved consulting with experts in curation and digitisation, as well as cyperologists. It has been an incredibly useful project, as a procedure for recurations is being developed to guide curators in the future. We present here the considerations, insights, and a workflow for recurating physical and digital herbarium collections simultaneously, whilst also highlighting issues and how these were resolved.

Keywords

curation, specimens

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Presented at

SPNHC-TDWG 2024

Acknowledgements

Royal Botanic Gardens, Kew, Lilly Cranham, Martin Xanthos, Anna Haigh, Ashleigh Whittaker, Isabel Larridon.

Hosting institution

Royal Botanic Gardens Kew

Conflicts of interest

The authors have declared that no competing interests exist.